

## Heart Diseases

### Summary of Methods and Data for Estimate of Costs of Illness

1. Estimated Total Economic Cost	\$ 183.1 billion
Estimated Direct Cost	\$ 101.8 billion
Estimated Indirect Cost	\$ 81.3 billion
Reference Year	1999
IC Providing the Estimate	NHLBI
Direct Costs Include: Other related nonhealth costs	No
Indirect Costs Include:	
Mortality costs	Yes
Morbidity costs: Lost workdays of the patient	Yes
Morbidity costs: Reduced productivity of the patient	No
Lost earnings of unpaid care givers	No
Other related nonhealth costs	No
Interest Rate Used to Discount Out-Year Costs	6 %
2. Category code(s) from the International Classification of Diseases, 9th Revision, Clinical Modification,(ICD-9-CM) for all diseases whose costs are included in this estimate: <u>390-398; 402; 404-429</u> .	
3. Estimate Includes Costs:	
Of related conditions beyond primary, strictly coded ICD-9-CM category	No
Attributable to the subject disease as a secondary diagnosis	No
Of conditions for which the subject disease is an underlying cause	No
4. Population Base for Cost Estimate (Total U.S. pop or other)	Total U.S. pop.
5. Annual (prevalence model) or Lifetime (incidence model) Cost:	Annual
6. Perspective of Cost Estimate (Total society, Federal budget, or Other)	Total society
7. Approach to Estimation of Indirect Costs	Human capital

#### 8. Source of Cost Estimate:

The Morbidity and Mortality Chartbook on Cardiovascular, Lung, and Blood Diseases, 1998, National Heart, Lung, and Blood Institute, October, 1998 has cost estimates for 1998. The Chartbook is on the web through the NHLBI home page: <http://nhlbi.nih.gov/index.htm>. Estimates for 1999 appear in the American Heart Association publication: "1999 Heart and Stroke Statistical Update" released in late 1998. See AHA website: <http://www.amhrt.org>.

#### 9. Other Indicators of Burden of Disease:

Heart disease is the leading cause of death in men and women. It becomes the leading cause in men by age 40. Over 21 million Americans have heart disease, of whom 5 million are limited in activity, making heart disease the third most common chronic condition, after orthopedic impairments and arthritis, causing activity limitation.

#### 10. Commentary:

Direct cost estimates for heart disease in 1995 and 1997 were estimated by Tom Hodgson (National Center for Health Statistics) and provided to the NHLBI and the American Heart Association. Linear extrapolation of the 1995 to 1997 change to 1998 and then to 1999 was the method to estimate direct costs of heart disease for 1999. Hodgson's estimates are based on a variety of survey data from the NCHS, the Health Care Financing Administration, and elsewhere. His estimates for 1995 will appear in an NCHS report. Only the primary diagnosis of heart disease reported in the surveys was considered. Allocating costs according to the primary diagnosis eliminated overlap with non cardiovascular diseases. Costs associated with heart disease as a comorbid condition to some other primary diagnosis were not included. Costs incurred by family or other personal caregivers for heart disease patients cannot be estimated and were not included. The national health expenditures that cannot be allocated to diseases (e.g. construction and research) were not included in the heart disease direct costs.

The indirect morbidity cost of heart disease represents lost earnings from lost work days due to heart disease illness, i.e. lost productivity in 1999. Four groups of persons are included: a) labor force, b) institutionalized c) homemakers, and d) persons unable to work. An estimate of this cost for heart disease in 1980 was made by the National Center for Health Statistics. That estimate has been adjusted by a 1980-1999 inflation factor derived from mean earnings of full-time year-around workers as reported by the Bureau of the Census.

The indirect mortality cost of heart disease in 1999 represents lost productivity based on lost earnings attributed to premature deaths from heart disease in that year. It was estimated by applying the numbers of heart disease deaths in 1995, by age and sex, reported from national vital statistics, to the age-sex estimates of the present value of lifetime earnings discounted at six percent. These lifetime values were estimated for 1997 by Dr. Dorothy Rice (University of California, San Francisco) and provided to the National Heart, Lung, and Blood Institute on July 13, 1999 by Wendy Max. They are not published. Those values were inflated to 1999 using the inflation factors mentioned above. Heart disease deaths in 1995 were those where heart disease was the underlying cause of death regardless of what other contributing causes may have been present. Other deaths, where heart disease was a contributing cause, were not included. The accuracy of estimates of the present value of lifetime earnings has not been assessed by anyone at NHLBI; estimates were taken at face value.